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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/653,422	08/31/2000	MASAHIRO MINOWA	P5280A	4672

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EXAMINER	
PARK, CHAN S	

ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/653,422	MINOWA, MASAHIRO	
	Examiner	Art Unit	
	CHAN S PARK	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 August 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4-6*.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *10*.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aruga et al. European Patent Application No. 919,392 (hereinafter Aruga) in view of Hirst et al. U.S. Patent No. 5,930,553 (hereinafter Hirst).

1. With respect to claim 1, Aruga discloses a printer comprising:

a. a printing processor (CPU 2 in conjunction with mechanical part 6 in fig. 1) for printing at least one of text and graphics (col. 3, lines 14-16);

b. a holder for holding one of a plurality of replaceable units used in conjunction with the printing processor (col. 3, lines 35-43);

c. nonvolatile-memory (flash ROM 5) comprising a plurality of areas for storing data (counter values in col. 3, line 49 – col. 4, line 4);

d. a counting processor (CPU 2) for metering an amount related to a specific function of the one replaceable unit (col. 4, lines 30-57); and

e. a storage processor for storing a cumulative amount relating to the specific function metered by the counting processor in a specific area of the memory (A-counter value), and when the one replaceable unit is replaced with a new replaceable unit, storing a separate cumulative amounts relating to the metered specific functions of the new replaceable unit (resetting of A-counter value in col. 2, lines 24-27 & col. 10,

lines 9-13), and storing in a specific area of memory a total amount relating to the specific function (B-counter value in col. 2, lines 24-27; col. 4, lines 30-57; col. 10, lines 9-13).

Aruga does not disclose expressly that the printer has a detection processor for detecting at least one of mounting or replacement of the one replaceable unit in the holder.

Hirst discloses a printer (image forming device 10) comprising:

a printing processor for printing at least one of text and graphics (col. 4, lines 25-27);

a holder for holding one of a plurality of replaceable units (toners) used in conjunction with the printing processor (col. 4, lines 29-32);

a detection processor (printer controller 13) for detecting at least one of mounting or replacement of the one replaceable unit in the holder (col. 4, lines 52-67);

a nonvolatile memory comprising a plurality of areas for storing data (memory device 19 in col. 4, lines 45-49); and

a counting processor for metering an amount related to a specific function of the one replaceable unit (col. 5, lines 7-24).

Aruga and Hirst are analogous art because they are from the same field of endeavor that is the printer consumable monitoring art.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate the detection processor of Hirst into the printer consumable monitoring system of Aruga.

Since Aruga suggests/teaches a step of resetting the history information when one of replaceable part is replaced (col. 2, lines 24-27), the motivation for combing two references would have been to automatically reset the history when the one replaceable part is replaced.

Therefore, it would have been obvious to combine Aruga with Hirst to obtain the invention as specified in claim 1.

2. With respect to claim 2, Aruga discloses the printer as in claim 1, wherein the one replaceable unit comprises a cutter device (roll paper cutter 63) for cutting a print medium on which the printing processor prints text or graphics, and the counting processor meters the number of times the cutter device cuts the print medium (col. 4, lines 49-51).

3. With respect to claim 3, Hirst discloses the printer as claim 1, wherein the one replaceable unit comprises an ink cartridge for supplying ink for the printing processor to print text or graphics, and the counting processor meters the amount of ink supplied in printing (col. 5, lines 7-24).

4. With respect to claim 4, Aruga discloses the printer as claim 1, wherein the one replaceable unit comprises a print head for printing text or graphics, the printing processor prints text or graphics by driving the replaceable print head installed in the holder, and the counting processor calculates a print head drive count when printing text or graphics (col. 2, lines 18-20 & roll paper print head 62 in fig. 1).

5. With respect to claim 5, Aruga discloses the printer as claim 1, wherein the one replaceable unit comprises an operating unit related to the printing operation of the printer (col. 3, lines 35-43).

6. With respect to claim 6, Aruga discloses the printer as claim 1, wherein the one replaceable unit comprises a consumable of the printer (col. 3, lines 35-43).

7. With respect to claim 7, Aruga discloses the printer as claim 1, further comprising a reporting processor that reports to the printing processor information relating to amounts associated with at least one specific function stored in memory in response to a specific operation of the printer, and the printing processor printing the reported information (fig. 6).

See col. 5, lines 25-36 of Hirst.

8. With respect to claim 8, Aruga discloses the printer as claim 7, further comprising a data communication processor connected to an external device (host) for sending and receiving data therewith;

the reporting processor reporting to the printing processor information relating to amounts associated with at least one specific function stored in memory in response to a specific command from the external device (col. 3, lines 18-23), and

the printing processor printing the reported information (fig. 6).

Since it is apparent to one of ordinary skill in the art that data is transferred between the host and the printer, the printer inherently includes the data communication processor that monitors/controls the communication.

Also, see col. 6, lines 4-12 of Hirst. Hirst teaches that both the host and the printer can access the consumable amount status saved in the memory device.

9. With respect to claim 9, Aruga discloses the printer as claim 8, wherein the external device comprises a host computer,

the reporting processor reports to the data communication processor information relating to amounts associated with at least one specific functions stored in memory in response to a specific command from the host computer, and

the data communication processor sends the information to the host computer (col. 9, lines 33-43).

Also, see col. 6, lines 4-12 of Hirst. Hirst teaches that both the host and the printer can access the consumable amount status saved in the memory device.

10. With respect to claim 10, Hirst discloses the printer as claim 1, further comprising a time information obtaining means for obtaining time information comprising at least date information identifying when the one replaceable unit is replaced (installation date), and

the storage processor storing the date information in memory in correlation with the amount of the specific metered function at the time the one replaceable unit is replaced (col. 3, lines 23-33).

Also, see col. 4, lines 1-4, 55-57 & fig. 6 of Aruga.

11. With respect to claim 11, Hirst discloses the printer as claim 10, further comprising a real-time clock and the time information obtaining means is for reading the

real-time clock. The presence of the RTC is inherent since it provides the date information.

Also, see col. 3, lines 44-48 & col. 10, lines 35-39 of Aruga.

12. With respect to claim 12, Hirst discloses the printer as claim 10, further comprising an interface connecting to a host computer, and the time information obtaining means comprises a communication controller for obtaining time information (installation date) from the host computer (col. 3, lines 40-42 & col. 5, lines 1-6).

13. With respect to claim 13, Aruga discloses a printer comprising:

a printing processor (CPU 2 in conjunction with mechanical part 6 in fig. 1) for printing at least one of text and graphics (col. 3, lines 14-16);

a holder for holding one of a plurality of replaceable units used in conjunction with the printing processor (col. 3, lines 35-43);

nonvolatile memory (flash ROM 5) comprising a plurality of areas for storing data (counter values in col. 3, line 49 – col. 4, line 4);

a counting processor (CPU 2) for metering an amount relating to a specific function of the one replaceable unit (col. 4, lines 30-57); and

a storage processor for storing a cumulative amount relating to the specific function metered by the counting processor in a specific area of the memory (A-counter value), and when the one replaceable unit is replaced with a new replaceable unit, storing a separate cumulative amounts relating to the metered specific functions of the new replaceable unit (resetting of A-counter value in col. 2, lines 24-27 & col. 10, lines

9-13), and storing in a specific area of memory a total amount relating to the specific function (B-counter value in col. 2, lines 24-27; col. 4, lines 30-57; col. 10, lines 9-13).

Aruga does not disclose expressly the printer comprising:

a detection processor for detecting at least one of removal, installation, or replacement of the one replaceable unit in the holder;

a time information obtaining means for obtaining time information comprising at least date information; and

a storing processor for storing one of the date of installation or the date of replacement unit obtained from the time information means.

Hirst discloses a printer (image forming device 10) comprising:

a printing processor for printing at least one of text and graphics (col. 4, lines 25-27);

a holder for holding one of a plurality of replaceable units (toners) used in conjunction with the printing processor (col. 4, lines 29-32);

a detection processor (printer controller 13) for detecting at least one of mounting or replacement of the one replaceable unit in the holder (col. 4, lines 52-67);

a time information obtaining means for obtaining time information comprising at least date information (col. 3, lines 23-33);

a nonvolatile memory comprising a plurality of areas for storing data (memory device 19 in col. 4, lines 45-49);

a counting processor for metering an amount related to a specific function of the one replaceable unit (col. 5, lines 7-24); and

a storing processor for storing one of the date of installation or the date of replacement unit obtained from the time information means (col. 3, lines 23-33).

Aruga and Hirst are analogous art because they are from the same field of endeavor that is the printer consumable monitoring art.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate the detection processor and the date storing processor of Hirst into the printer consumable monitoring system of Aruga.

Since Aruga suggests/teaches a step of resetting the history information when one of replaceable part is replaced (col. 2, lines 24-27), the motivation for combing two references would have been to automatically reset the history when the one replaceable part is replaced. Furthermore, by incorporating the method of updating the installation date and the usage history in the Aruga printing system, the user would have predicted/notified the consumable run out date.

Therefore, it would have been obvious to combine Aruga with Hirst to obtain the invention as specified in claim 13.

14. With respect to claim 14, Aruga discloses a printer as in claim 13, further comprising:

usage limit memory for storing a usage limit value indicative of at least one of a maximum usable volume or count associated with the specific function of the replaceable unit (col. 10, lines 19-22); and

a signal output section for outputting a signal indicative that at least one of the usage amount or count associated with the specific function of the one replaceable unit

is at least one of near and at the stored usage limit value (col. 10, lines 19-22).

It should be noted that every time the counter decrements the value, it is sent to the host.

Furthermore, Hirst discloses a signal output section for outputting a signal indicative that at least one of the usage amount or count associated with the specific function of the one replaceable unit is at least one of near and at the stored usage limit value (col. 1, lines 21-24) and the storage processor for storing the time information, including at least date information, obtained from the time information obtaining means in memory in correlation with the one replaceable unit when the signal output section outputs said signal (average consumable life in col. 3, lines 23-33 & col. 4, lines 56-59).

Note that since Hirst teaches both the installation date and the average consumable life value, a schedule date of replacement can be easily obtained and apparent to one of ordinary skill in the art.

15. With respect to claim 15, Hirst discloses a printer as in claim 13, wherein the one replaceable unit comprises an ink cartridge, the amount associated with the specific function is an ink discharge count, and the counting processor comprises a discharge counter (col. 5, lines 7-24). Read col. 2, lines 18-20 of Aruga.

16. With respect to claim 16, arguments analogous to those presented for claims 1 and 7, are applicable.

17. With respect to claim 17, arguments analogous to those presented for claim 2, are applicable.

18. With respect to claim 18, arguments analogous to those presented for claim 3, are applicable.

19. With respect to claim 19, arguments analogous to those presented for claim 4, are applicable.

20. With respect to claim 20, arguments analogous to those presented for claim 8, are applicable.

21. With respect to claim 21, arguments analogous to those presented for claim 9, are applicable.

22. With respect to claim 22, arguments analogous to those presented for claim 10, are applicable.

23. With respect to claim 23, arguments analogous to those presented for claim 13, are applicable.

24. With respect to claim 24, arguments analogous to those presented for claim 14, are applicable.

25. With respect to claim 25, arguments analogous to those presented for claim 1, are applicable.

26. With respect to claim 26, arguments analogous to those presented for claim 13, are applicable.

Conclusion

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAN S PARK whose telephone number is (703) 305-2448. The examiner can normally be reached on M-F 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on (703) 305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chan S. Park
Examiner
Art Unit 2622

csp
June 10, 2004

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